REMARKS

Claims 1-4 are all the claims pending in the application. Claim 4 is withdrawn from consideration as being drawn to a non-elected invention. Applicants cancel claim 5 by way of this Amendment. Claims 1-3 presently stand rejected.

Claims 1-3 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujikkura (JP 4-160028) in view of Le Sergent (5,194,714) and optionally in view of Yokota (4,846,867) and Fleming (4,972,895).

Analysis

To review briefly, claim 1 is directed to a method for making an optical fiber preform. The method includes the step of injecting, via an injector means, at least one substance, in the form of silica or a precursor of silica, in the vicinity of a heating area created by heating means. This heating area is created during at least one pass of the heating means and injector means.

The injector means is associated with the heating means. During the pass along the longitudinal axis of the preform, the relative positions of the injector means and the heating means are adjusted with respect to each other. The silica is deposited in the heated area regardless of the position of the heating means.

Thus, in the present invention, the injecting means deposits silica in the heated area created by the heating means. In other words, the injecting means and the heating means are associated with each other, wherein the injecting means injects in the vicinity of the heating area created by the heating means.

The Examiner asserts that the heating area can be arbitrarily designated. Further, the Examiner states that, "the heating area is not defined in a way that it precludes unheated sections."

Applicants respectfully submit that the heated area is self-explanatory. Moreover, when read in light of the specification, one of ordinary skill in the art would understand the meaning of this terminology as intended by Applicants. That is, the heated area is the area heated by the heating means and is clearly discussed in the specification and figures as the area ABCD that is created by the heating means. Thus, the heated area refers to that area heated by the heating means, i.e., the plasma torch, and it would not be consistent with the specification to interpret this area as being heated by any other heating means or as an unheated area. This feature is clearly explained in the specification.

Turning back to claim 1, the injector means injects silica in the heated area created by the heating means. Thus, the injector means and heating means are associated with each other, while also moving with respect to each other. JP '028 fails to teach or suggest this feature. Instead, JP '028 discloses multiple sets of heating/injecting means, but each heating means is not adjusted with respect to its associated injecting means; they are bundled together. Thus, the benefits of the present invention are completely lost with this reference. (See specification and paper no. 17 for a detailed explanation of the benefits of the present invention.)

More specifically, the Examiner relies on element 9 as the heating means, and element 17 as the injecting means (see Office action, page 3, third paragraph). However, these two elements are not associated with each other as in the present invention. That is, the "injecting means 17"

does not inject silica in the heated area created by the "heating means 9". Instead, the "injecting means 17" injects soot in the area heated by the heating means on the base 15, while the "heating means 9" heats an area to be injected by the elements associated on the base 7.

In view of the foregoing, JP '028 fails to teach or suggest that a heating means and its associated injector means, wherein said injector means injects silica in the heated area created by the heating means, are adjusted with respect to each other. Rather, JP '028 suffers from the same deficiencies outlined in the background portion of the pending specification, i.e., the heated area is not maximized because the injecting means and heating means are fixed with respect to each other.

The other cited references fail to make up for this deficiency of JP '028. Le Sergent fails to teach or suggest that the heating means and injector means associated with each other are movable with respect to each other. Yokota fails to teach or suggest movable heating or injector means. Still further, Fleming also fails to teach or suggest that the heating means and injector means that are associated with each other are movable with respect to each other.

Thus, even if one were to combine the references, one would not have been motivated to provide heating means and injecting means that are adjusted with respect to each other along the longitudinal axis of the preform, so that the silica is deposited in the heated area created by that heating means.

In view of the foregoing, claim 1 is patentable.

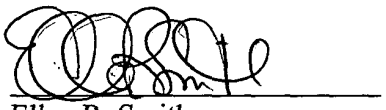
The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as claim 1 above, by virtue of their dependency therefrom.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 5 is canceled.

The claims are amended as follows:

1. (Four Times Amended) A method of fabricating an optical fiber preform including a step of outside deposition of silica possible doped with at least one dopant [by] , comprising:

injecting at least one substance, with an injector means, in the form of silica or a precursor of silica, in [the vicinity of a heating] a heated area created by heating means during at least one pass of said heating means and [an] said injector means, wherein said injector means is associated with said heating means,

wherein said one pass is along a longitudinal axis of said preform, during which the relative positions of said injector means and said heating means are adjusted with respect to each other, so that said silica is deposited in said heated area regardless of the position of said heating means, and

wherein said heating means is a plasma torch.

2. (Amended) The method claimed in claim 1, wherein said adjustment is carried out between each pass and the next.

3. (Twice Amended) The method claimed in claim 1, wherein said plasma torch has a main axis in a plane, said injector means has a main axis in a plane, wherein a fixed angle is defined by the intersection of said plane of said plasma torch and said plane of said injector means, and said injector means and said plasma torch move relative to each other, within their respective planes, in a direction parallel to said longitudinal axis of said preform.